

SPL07-00026

RECEIVED

AUG 28 2007



BY \_\_\_\_\_

**International Forestry**  
**CONSULTANTS, INC.**

11415 NE 128th Street, Suite 110, Kirkland, WA 98034

**TREE PLAN FOR WOODY SHORT PLAT**  
**12420 NE 70<sup>TH</sup> COURT**  
**KIRKLAND, WA**

**PARCEL #1241500022**



**JUNE 1, 2007**

TRE07-00497

## Table of Contents

1. Introduction.....	1
2. Description .....	1
3. Methodology .....	1
4. Observations.....	2
5. Discussion .....	3
6. Tree Protection Measures.....	3
Recommendations for Tree Retention & Preservation during Construction .....	4
7. Tree Replacement .....	4
8. Monitoring Tree Health.....	5

## Appendix

Site/Tree Photos – pages 6 - 10

Tree Summary Table

Survey Map – Displaying Tree Locations, Tree Numbers, Drip Lines and Limits of Disturbance (To Be Incorporated onto Site Plan)

Site Plan Specifications (To Be Incorporated onto Site Plan)

## **1. Introduction**

International Forestry Consultants (INFO) was contacted by Kevin Woody on May 17<sup>th</sup>, and was asked to compile a 'Tree Plan report' for 1 parcel located within the City of Kirkland, WA.

The proposed 2-Lot short plat encompasses the following parcel: #1241500022, known as 12420 - NE 70<sup>th</sup> Court. Our assignment is to prepare a written report on present tree conditions, which is to be filed with the preliminary permit application.

This report encompasses all the criteria set forth under the City of Kirkland's tree regulations. The required minimum tree density for the entire area (29,376 sq. ft.) is 20 tree credits.

Date of Field Examination: May 25, 2007

## **2. Description**

A single-family dwelling exists in the southeast portion of the parcel. NE 70<sup>th</sup> Court borders the property to the south. 124<sup>th</sup> Ave. NE borders the property to the west. The topography is level. The north perimeter of Lot 2 slopes moderately down to the property line. This area is comprised mainly of native trees and vegetation, which includes vine maple. Nonnative invasive species of English ivy and blackberry were also observed in this area. There are no sensitive areas on or adjacent to the parcel.

Twenty-six significant trees were located and assessed on the parcel. The majority of these are native, coniferous species. A volunteer grouping of Norway maple is situated at the front of the property, adjacent to 124<sup>th</sup> Ave. NE. Eleven trees are situated on Lot 2, and 15 trees are situated on Lot 1.

Only one tree was identified on neighboring property whose drip line encroaches onto the subject parcel. This tree is situated approximately 8' to 10' from the west property line of lot 1. No development impacts are expected to take place near this tree.

All of the significant trees on the property have been identified with a numbered aluminum tag attached to the tree at DBH (diameter at breast height, 4 ½ feet above ground).

## **3. Methodology**

Each tree in this report was visited. Tree diameters were measured by tape. The tree heights were measured using a Spiegel Relaskop. Each tree was visually examined for defects and vigor. The tree assessment procedure involves the examination of many factors:

- The crown of the tree is examined for current vigor. This is comprised of inspecting the crown (foliage, buds and branches) for color, density, form, and annual shoot growth, limb dieback and disease. The percentage of live crown is estimated for coniferous species only and scored appropriately.
- The bole or main stem of the tree is inspected for decay, which includes cavities, wounds, fruiting bodies of decay (conks or mushrooms), seams, insects, bleeding, callus development, broken or dead tops, structural defects and unnatural leans. Structural defects include crooks, forks with V-shaped crotches, multiple attachments, and excessive sweep.
- The root collar and roots are inspected for the presence of decay, insects and/or damage, as well as if they have been injured, undermined or exposed, or original grade has been altered.

Based on these factors, a determination of viability is made. Trees considered not viable are trees that are in a poor or declining condition due to disease, extensive decay and/or cumulative structural defects, which

exacerbate failure potential. Inspection methods included examining the trees with binoculars and sounding the trunks and surface roots with a rubber mallet. No invasive methods were used to assess conditions.

#### **4. Observations**

Detailed information for each tree can be found on the Tree Summary Table found at the back of this report. The parcel trees are discussed as follows.

Trees #1 and #2 are situated between the driveway of the existing house and the east property line. These are young deciduous varieties, likely planted after construction of the house. Both of these are in fairly good condition. No concerning defects were observed.

Trees #3 through #11 are all native western red cedars, situated in the backyard of lot #2. These are considered mature specimens. No declining conditions were observed. The crowns are comprised of dense foliage, displaying a good bright green color. Most of these have developed insignificant natural leans as they compete for sunlight and nutrients.

Tree #3 suffered a major failure during the December 14<sup>th</sup> windstorm. This involved the loss of a codominant (equal diameter) stem at approximately 25' above ground. This failure has compromised the structural stability of the remaining stem. See photo. This tree presently represents a serious hazard to the existing house on lot 2.

Tree #5 has also developed codominant stems at approximately 40' above ground. These stems appear to be fairly well attached to the main trunk, and not protruding at a narrow angle of attachment. A cavity was observed at the base. A decay column is suspected within the lower trunk. This is not necessarily concerning, as this species naturally develop internal decay as they mature. Minor decay is suspected within the lower trunks of all the mature cedars at this site. Tree #5 is a boundary line tree.

Tree #12 is a mature western hemlock. This tree has developed an unnatural lean to the northwest. Structural stability may have been compromised during the December 14<sup>th</sup> windstorm. The main trunk forks into codominant stems at 36' above ground. These stems appear to protrude from the main trunk via a narrow angle of attachment. The foliage is of fair density and good color. This tree would not be a good candidate for retention through the development of this lot, due to cumulative structural defects and a moderate to high potential for failure.

Trees #13, #14, and #16 through #21 are young to semi-mature Douglas-firs. All of these are situated on the slope near the north property line of Lot 1. Most have developed fairly good taper and form. Minor crooks were observed on the boles of most trees. These are considered minor structural defects. The crowns are displaying healthy foliage and good vigor.

Tree #16 recently lost its top at approximately 40' above ground, probably during the December 14<sup>th</sup> windstorm. It appears the break occurred at a major crook in the stem. A new leader or top is likely to regenerate at the break. Re-growth of new tops is weakly attached and should be monitored periodically. Continued preservation is reasonable at this time.

Tree #19 has developed a major crook at approximately 35' above ground. This is a mature specimen, considerably older than all of the other Douglas-fir. Failure potential is considered moderate. Swelling was observed on the lower trunk. Internal decay is suspected, likely attributable to a past injury when the tree was much younger. Continued preservation is feasible, as this tree is above the canopy and familiar with strong prevailing winds.

Tree #20 has developed very poor structure, as a result of suppression. Its growth has been severely restricted by adjacent trees. This tree would not be a good candidate for retention, due to cumulative structural defects and suppression.

Tree #15 is a semi-mature to mature red alder. The lower trunk forks into 2 stems at 1' above ground. This is not an appropriate tree species to retain near improvements, due to a low tolerance to site alterations. This pioneer species is likely to be problematic in the near future, due to a short life span and usual premature decline in urban areas.

Trees #21 through #26 are comprised of a grouping of Norway maple. All of these trees contribute to one large crown. Most have developed fairly good form and typical structure. The foliage appears healthy and of good vigor. No foliar pathogens or insect infestations were observed.

Tree #22 is made up of 2 trunks. One of these trunks forks into codominant stems, which has recently failed. See photo. The failure of this forked attachment created a split between the 2 stems, making it unsalvageable. The failed portion of the stem is hung up in the trees crown and represents a high potential for failure. This tree is considered nonviable.

The remainder of the clump is suitable for preservation. Clearance pruning will likely be required, because of the large crown spread. Tree #24 has also developed codominant stems. These appear to be fairly well attached to the main trunk. This tree should only be retained in the grouping, and not isolated or exposed.

## **5. Discussion**

It is my understanding that no construction activity is to take place on lot #2. All of the trees on this lot are in good condition with the exception of tree #3.

Tree #3 is a serious hazard and should be removed. The failure of the codominant stem removed more than half of the circumference of the tree at the attachment. The failure pattern cannot be predicted; the top could fall in any direction. This failure represents a serious defect, which has compromised longevity.

Trees #12, #15, #20 and #22 are considered nonviable. These are not good candidates for retention through development, due to cumulative structural defects, which represent a high potential for failure. Tree #15 is nonviable due to suitability of species and structural defects.

Limits of disturbance for trees potentially impacted by construction have been evaluated on the ground. Drip lines can be found on the tree summary table at the back of this report. Recommended "Limits of Disturbance" are also provided on this table for the trees on Lot 1. There are no concerns related to construction impacts and neighboring trees.

## **6. Tree Protection Measures**

Tree numbers, drip lines and "Limits of Disturbance" have been delineated on the site plan, found at the back of this report. This information should be transferred to the preliminary site plan that will be submitted with the preliminary permit application.

1. Tree protection fencing should be erected at the drip-lines prior to moving any heavy equipment on site. Doing this will set clearing limits and avoid compaction of soils within root zones of retained trees. Fencing should only be moved to the "Limit of Disturbance" just prior to commencement of work.
2. Any clearance pruning required should also occur before any large equipment is brought on site. Any branches that may be damaged should be tied back or properly pruned back if warranted.
3. Excavation limits should be laid out in paint on the ground to avoid over excavating.
4. Excavations within the drip-lines or up to the "Limits of Disturbance" shall be monitored by a qualified tree professional so necessary precautions can be taken to decrease impacts to tree parts. Exploratory excavations with a qualified tree professional are warranted when work is required and allowed up to the "limits of disturbance".
5. To establish sub grade for foundations, curbs and pavement sections near the trees, soil should be removed parallel to the roots and not at 90 degree angles to avoid breaking and tearing roots that lead

- back to the trunk within the drip-line. Any roots damaged during these excavations should be exposed to sound tissue and cut cleanly with a saw. Cutting tools should be sterilized with alcohol.
6. Areas excavated within the drip-line of retained trees should be thoroughly irrigated weekly during dry periods.

### ***Recommendations for Tree Retention & Preservation during Construction***

One of the most important steps in successful tree retention during development is to allow adequate growing space for trees to remain healthy and vigorous.

The following guidelines are recommended to ensure that the designated space set aside for the preserved trees are protected and construction impacts are kept to a minimum.

Standards have been set forth under Kirkland Zoning Code 95.35.6 of Chapter 95. Please review these standards prior to any development activity.

1. Tree protection guidelines should be incorporated into work contracts and monetary penalties should be imposed when they are not complied with. This will make workers aware of the importance of preserving tree health.
2. Clearance pruning should be completed prior to demolition/construction. This will provide clearance for equipment and decrease the risk of branches becoming damaged and injured.
3. Temporary chain-link fencing at least 4' high is to be erected around trees to be retained to define tree protection zones. This will help to minimize injury to preserved roots and to avoid the risk of soils becoming compacted by large equipment within the root zones. All materials, equipment and spoils should be kept outside of the fenced areas.
4. Work that is to take place within the tree protection areas should be supervised by a qualified professional so necessary precaution to protect the tree can be taken. Work can be successfully performed within the drip-line if done carefully and correctly.
5. If unexpected injuries occur to trees during construction, they should be evaluated as soon as possible so that appropriate treatments can be applied.
6. Fences should remain onsite until completion of construction and the Planning Official authorizes their removal.

### ***7. Tree Replacement***

It is not likely that supplemental trees will need to be planted to meet the minimum tree density requirement for the new lot. However, tree plantings may be preferred to enhance new landscaping. The site is suitable for a large variety of ornamental and native tree species. Refer to the *Kirkland Plant List* for desirable species.

For ornamental trees to be planted in the front and side yards, trees that mature at 20 to 40 feet are recommended. These trees could include the many cultivated varieties of red maple, cherry, plum, Callery pear, crab apple, ash, hawthorn, dogwood, and magnolia. Japanese stewardia, European hornbeam, Tartarian maple, or Amur maple are also smaller noteworthy specimen trees.

The required minimum size of supplemental trees shall be at least 6 feet in height for conifer species and at least 2 inches in caliper for deciduous trees. Caliper is measured at 1-foot above ground. For planting and maintenance specifications, refer to chapters 95.45 and 95.50 of the Kirkland Zoning Code.

## 8. Monitoring Tree Health

As your trees mature, you should be aware of the following conditions that may be indicators of declining tree health.

- Appearance of fungal fruiting bodies which will appear as small "shelves" on the bole and branches or mushroom-like growths near the base of the tree.
- Dead or soft flaky wood in cavities or under the bark.
- Thinning crowns.
- The appearance of yellow or orange needles other than near the stem. (Cedar trees may exhibit orange needles in the fall; called "flagging" that is a normal response to drought and not a symptom of long-term decline.)
- Leaning stems, extraordinary bark flaking, stem swelling or any other abnormalities on the bole.
- Extraordinary cone production.
- Insect entry holes. These are about the size of a pencil lead and probably are accompanied by "sawdust".
- Premature leaf-fall or the appearance of dead limb tips. Droopy top or thinning crown. Dying treetop.

*There is no warranty suggested for any of the trees subject to this report. Weather, latent tree conditions, and future man-caused activities could cause physiologic changes and deteriorating tree condition. Over time, deteriorating tree conditions may appear and there may be conditions, which are not now visible which, could cause tree failure. This report or the verbal comments made at the site in no way warrant the structural stability or long term condition of any tree, but represent my opinion based on the observations made.*

*Nearly all trees in any condition standing within reach of improvements or human use areas represent hazards that could lead to damage or injury.*

*The client is encouraged to contact his/her local government jurisdiction to get information regarding permits required before removing or trimming trees and shrubs.*

Please call if you have any questions or I can be of further assistance.

Sincerely,



Bob Layton  
Certified Arborist #PN-2714A

Codominant stem failure of Tree #3



Forked top of Tree #5 – fairly stable





View of tree crowns from NE 70<sup>th</sup> Court



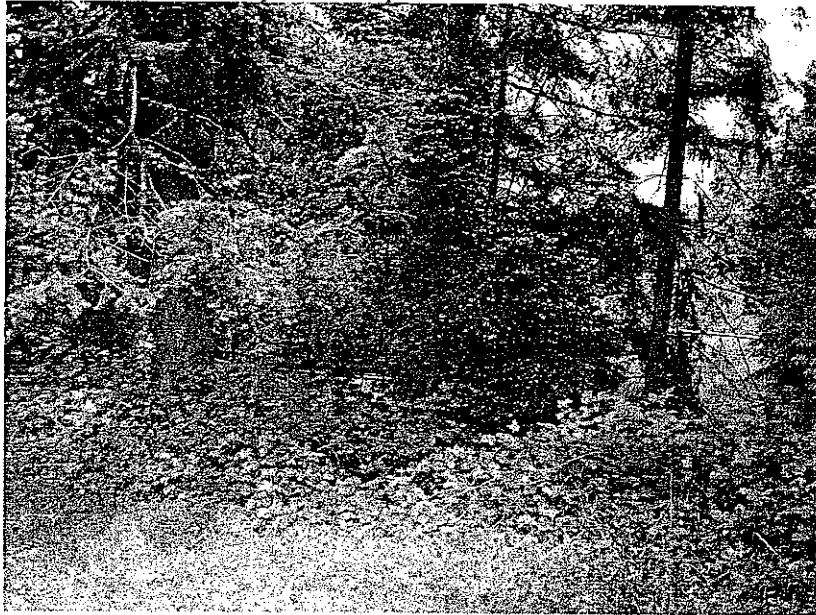
Forked top of Tree #12



Tree #15 – forked at 1'/poor structure



Douglas-fir trees on slope of north perimeter



Recent broken top of Tree #16



Failure of Tree #22 - irreparable



Norway maple grouping at front of property



Tree #19





# Tree Summary Table

For: Kevin Woody  
12420 NE 70th Court  
Kirkland

International Forestry Consultants, Inc.  
Date: 5/25/2007  
Inspector: Layton

## Tree/Tag # Species

Native/  
Planted/  
Volume DBH Height Credit Tree  
Drip-Line/Limits of Disturbance (feet)  
Condition Viability Comments

Tree/Tag #	Species	Native/ Planted/ Volume	DBH	Height	Credit	Tree						Condition	Viability	Comments
						N	S	E	W					
1	European white birch	P	13	42	2.5	9	10	7	6			good-fair	viable	clump of 3 stems
2	Japanese maple	P	6	14	1	8	9	5	8			good	viable	2 stems
3	western red cedar	N	34	96	na	12	12	13	12			fair	nonviable	recent codominant stem failure
4	western red cedar	N	35	92	13.5	12	12	14	12			excellent	viable	excellent taper/color
5	western red cedar	N	31	106	11.5	12	13	na	17			fair	viable	near property line
6	western red cedar	N	25	84	8.5	15	11	10	14			good	viable	slight lean to NW/ good taper
7	western red cedar	N	40	102	16	13	14	15	14			excellent	viable	good color/taper
8	western red cedar	N	42	114	17	13	15	12	na			good	viable	minor decay in lower trunk suspected
9	western red cedar	N	41	117	16.5	14	17	9	na			good	viable	cavity at base-east side/moderate decay
10	western red cedar	N	23	85	7.5	11	5	12	12/10			fair-good	viable	minor decay in lower trunk suspected
11	western red cedar	N	27	92	9.5	5	14	10	12/10			fair-good	viable	minor decay in lower trunk suspected
12	western hemlock	N	26	87	na	16/na	14/na	14/na	16/na			fair	nonviable	unnatural lean
13	Douglas-fir	N	13	63	2.5	12	8/8	8/8	8/8			good	viable	young/sound-no concerns
14	Douglas-fir	N	11	61	1.5	na	6/8	5/8	10/8			good-fair	viable	minor crooks on lower trunk
15	red alder	N	19	48	na	13	15/na	8/na	7/na			fair	nonviable	forks at 1' into 2 stems
16	Douglas-fir	N	14	40	3	12	10/8	9/8	11/8			fair	viable	slight lean to NW/ broken top
17	Douglas-fir	N	9	43	1	9	7/7	6/7	5/7			fair-good	viable	natural lean to north/minor crooks
18	Douglas-fir	N	12	54	2	12	7/8	6/8	8/8			good	viable	remove Ivy from trunk
19	Douglas-fir	N	29	113	10.5	16	20/15	16/12	19/12			fair-good	viable	multiple crooks
20	Douglas-fir	N	11	68	na	6	7/6	4/6	8/6			fair	nonviable	natural lean to west
21	Douglas-fir	N	19	80	5.5	14/na	14/12	9/10	15/10			good	viable	good form/no concerns
22	Norway maple	V	29	64	na	25/na	10/na	22/na	24/na			poor	nonviable	2 trunks-16", 13"
23	Norway maple	V	11	60	1.5	0/8	16/na	0/10	15/na			fair	viable	interior tree
24	Norway maple	V	13	60	2.5	0/10	14/na	0/na	20/12			fair	viable	codominant stems at 9', retain in grouping
25	Norway maple	V	16	64	4	0/na	30/14	24/15	20/14			good	viable	natural lean south
26	Norway maple	V	15	64	3.5	12/na	25/15	23/12	0/12			good	viable	natural lean east

Parcel Trees - Drip-Line and Limits of Disturbance measurements from face of trunk  
Trees on neighboring properties - Drip-Line and Limits of Disturbance measurements from property line

#3 = 501  
#12 = 501

Woody Shrub Plot

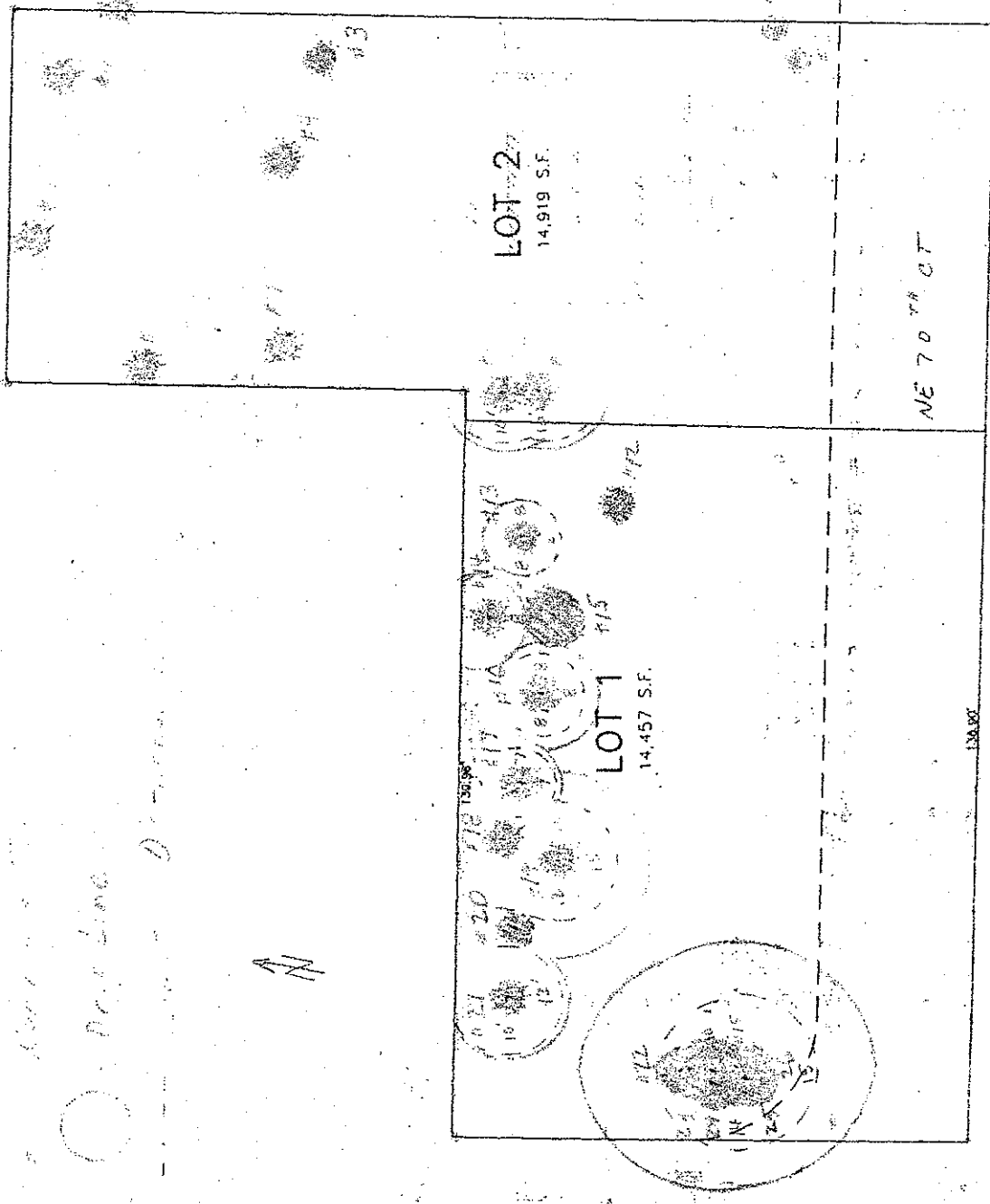
Scale: 1" = 34'

etc. Visible Trees

○ Dot Line

0'-100'

AN



## City of Kirkland-Tree Protection Standards

1. Tree Protection Fencing shall be erected at prescribed distance per arborist report. Fences shall be constructed of chain link and be at least 4 feet high.
2. Install highly visible signs on protection fencing spaced no further than 15 feet apart. Signs shall state "Tree Protection Area-Entrance Prohibited", and "City of Kirkland" code enforcement phone number.
3. No work shall be performed within protection fencing unless approved by Planning Official. In such cases, activities will be approved and supervised by a "Qualified Professional".
4. The original grade shall not be elevated or reduced within protection fencing without the Planning Official authorization based on recommendations from a qualified professional.
5. No building materials, spoils, chemicals or substances of any kind will be permitted within protection fencing.
6. Protection Fencing shall be maintained until the Planning Official authorizes its removal.
7. Ensure that any approved landscaping within the protected zone subsequent to the approved removal of protection fencing be performed with light machinery or hand labor.

In addition to the above, the Planning Official may require the following:

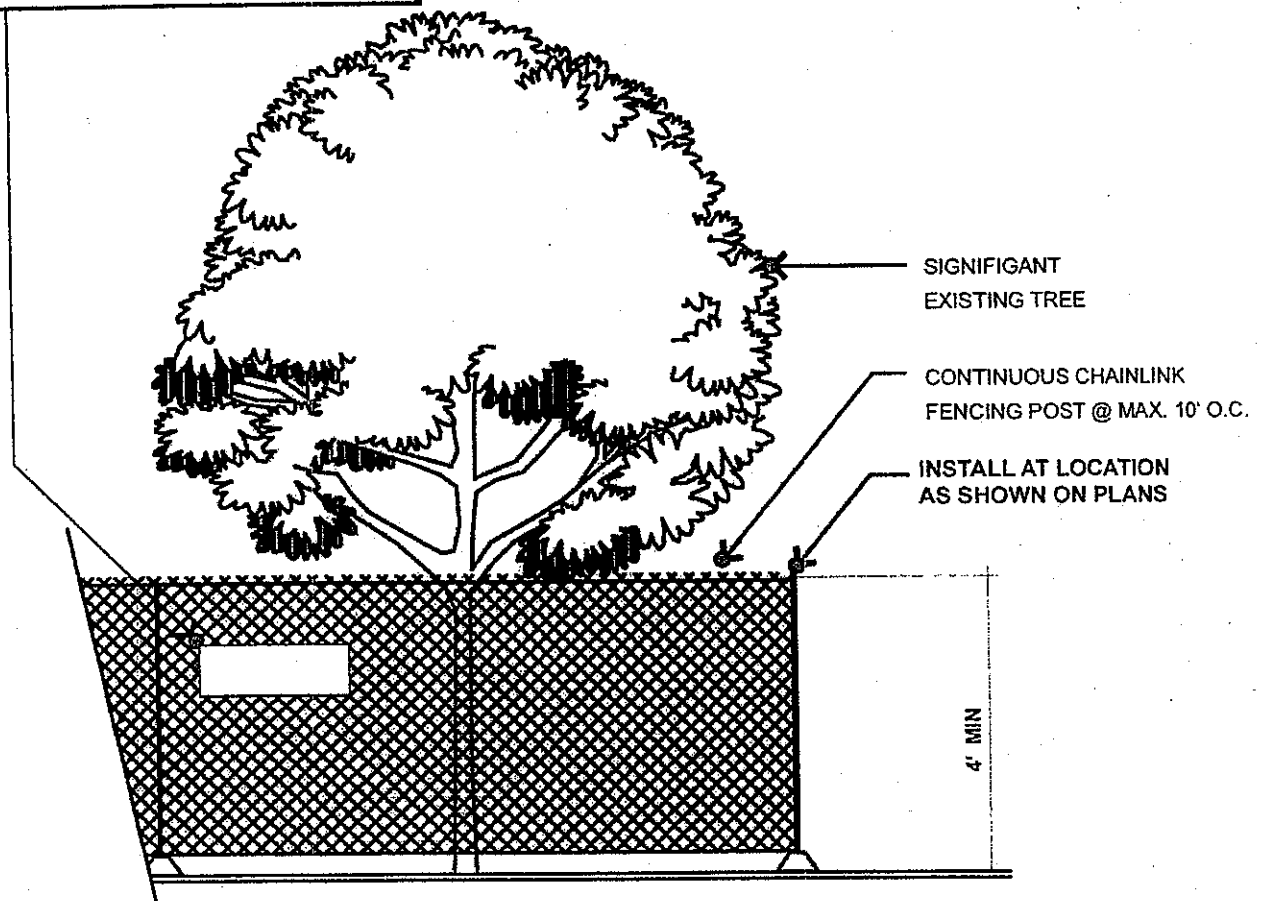
- a. If equipment is authorized to operate within the root zone, the area will be mulched to a depth of 6" or covered with plywood or similar material to protect roots from damage caused by heavy equipment.
- b. Minimize root damage by excavating a 2-foot deep trench, at edge of protection fencing to cleanly sever the roots of protected trees.
- c. Corrective pruning to avoid damage from machinery or building activity.
- d. Maintenance of trees throughout construction period by watering.

### Trees on Parcel

Tag #	Species	DBH	Condition	Viability
1	European white birch	13	good-fair	viable
2	Japanese maple	6	good	viable
3	western red cedar	34	fair	nonviable
4	western red cedar	35	excellent	viable
5	western red cedar	31	fair	viable
6	western red cedar	25	good	viable
7	western red cedar	40	excellent	viable
8	western red cedar	42	good	viable
9	western red cedar	41	good	viable
10	western red cedar	23	fair-good	viable
11	western red cedar	27	fair-good	viable
12	western hemlock	26	fair	nonviable
13	Douglas-fir	13	good	viable
14	Douglas-fir	11	good-fair	viable
15	red alder	19	fair	nonviable
16	Douglas-fir	14	fair	viable
17	Douglas-fir	9	fair-good	viable
18	Douglas-fir	12	good	viable
19	Douglas-fir	29	fair-good	viable
20	Douglas-fir	11	fair	nonviable
21	Douglas-fir	19	good	viable
22	Norway maple	29	poor	nonviable
23	Norway maple	11	fair	viable
24	Norway maple	13	fair	viable
25	Norway maple	16	good	viable
26	Norway maple	15	good	viable

# FENCING SIGN DETAIL

Tree Protection Area, Entrance Prohibited  
To report violations contact  
City Code Enforcement  
at (425)587-3225



1. MINIMUM FOUR (4 ) FOOT HIGH TEMPORARY CHAINLINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE (S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.
2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.
3. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE CITY PLANNING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF THE ON-SITE ARBORIST AND WITH PRIOR APPROVAL BY THE CITY PLANNING OFFICIAL.
4. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE.



**TREE PROTECTION  
FENCING DETAIL**